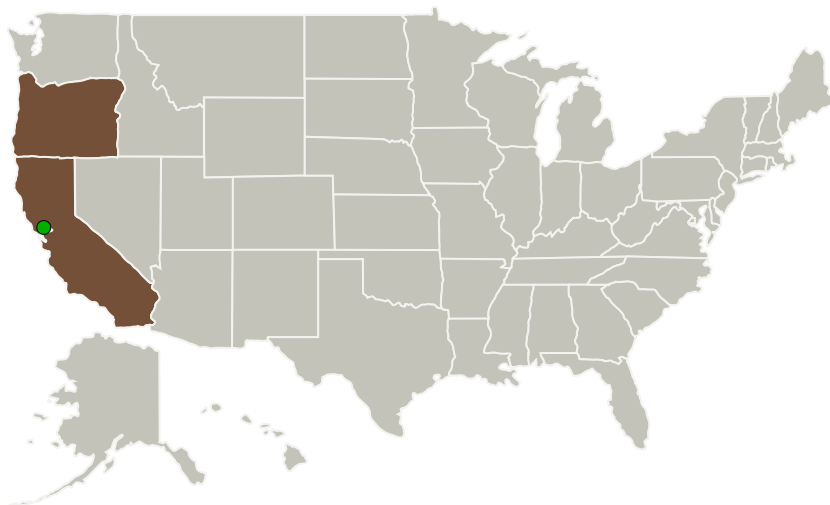




Project Introduction

We build machine learning capabilities that enables the Shadow Mode Assessment using Realistic Technologies for the NAS (SMART NAS) system to synthesize, optimize, and "auto-suggest" optimized Traffic Management Initiatives (TMIs). Multi Level Multi View (MLMV) machine learning is used to identify similar historical situations (days, scenarios, or airport conditions) in the NAS. TMIs used in historically similar situations are locally modified to optimize the parameters of the TMI to be used in the current day situation. SMART NAS is used to evaluate TMIs and to present fast time simulations to the end user to review the TMI and associated performance metrics before implementation.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
The Innovation Laboratory, Inc.	Lead Organization	Industry Women-Owned Small Business (WOSB)	Portland, Oregon
● Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

The Innovation Laboratory, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Continued on following page.

Auto-Suggest Capability via Machine Learning in SMART NAS, Phase I



Completed Technology Project (2015 - 2015)

Primary U.S. Work Locations

California

Oregon

Project Transitions

**June 2015:** Project Start**December 2015:** Closed out

Closeout Summary: Auto-Suggest Capability via Machine Learning in SMART NAS, Phase I Project Image

Closeout Documentation:

- Final Summary Chart Image(<https://techport.nasa.gov/file/138831>)

Images

Briefing Chart Image

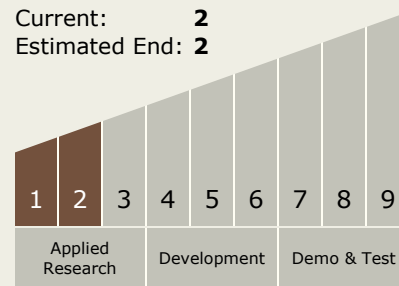
Auto-Suggest Capability via
Machine Learning in SMART NAS,
Phase I
(<https://techport.nasa.gov/image/130619>)

Project Management
(cont.)**Principal Investigator:**

Jimmy Krozel

Technology Maturity
(TRL)

Start: **1**
Current: **2**
Estimated End: **2**



Technology Areas

Primary:

- TX01 Propulsion Systems
 - TX01.3 Aero Propulsion
 - TX01.3.2 Turbine Based Combined Cycle

Target Destinations

The Sun, Earth, The Moon,
Mars, Others Inside the Solar
System, Outside the Solar
System